S/180/60/000/005/019/033
E111/E135

Investigation of the Main Factors in the Recrystallization of
Technical Iron in Rapid Electric Heating

and size of grains at times up to 5 seconds at 630 °C is shown in
Fig.5. Fig.6 shows the linear fall with rising reciprocal of
absolute temperature of the rates of nucleation (N) and growth
(G) of recrystallization grains (curves 1 and 2 after
deformation and after tempering, respectively). Preliminary
tempering leads to a reduction in both N and G for annealing
temperatures below 600 °C but has no effect at higher
temperatures. The authors discuss the kinetics of the process
in terms of N and G and also the activation energies and the
coefficient in the exponential time – reciprocal absolute
temperature relation (values are tabulated).
There are 6 figures, 1 table and 5 Soviet references.

SUBMITTED: April 1, 1960

Card 3/3

IVANOV, V. I., Engineer

"Investigation of Irregularity in Running a Hydro-
electric Unit." Thesis for degree of Cand. Techni-
cal Sci. Sub 24 Jun 49, Moscow Order of Lenin Power
Engineering Inst imeni V. M. Molotov.

Summary 82, 18 Dec 52, Dissertations Presented
for Degrees in Science and Engineering in Moscow
in 1949. From Vechernyaya Moskva, Jan-Dec 1949.

IVANOV, V.I., kandidat tekhnicheskikh nauk.

Calculating temporary irregularities in the operation of turbine-
generator units. Trudy VIGM no.12:138-166 '50.   (MIRA 10:8)
        (Hydraulic turbines)   (Electric generators)

IVANOV, V. I.

On the Self-Braking of Reverse-Blade Hydroturbines

The author examines the emergency braking of hydroturbines accom-
plished by adjusting the blades of the water wheel to a position for
which the turning moment, of the stopped wheel is equal to zero.   In
theory there are four possible positions for the blades. Experiments
have shown that two of them do not give stable braking. The author de-
termines the other two positions theroretically using the method of D.A.
Voytashevskiy. (RZhMekh, No. 6, 1955) Tr. Vses. n.-i. in-ta Gidromashinostr,
No. 18, 1954, 32-51.

SO: Sum. No. 744, 8 Dec 55 - Supplementary Survey of Soviet Scientific
     Abstracts (17)

AID P - 3327

Subject   : USSR/Power Engineering

Card 1/1   Pub. 26 - 13/28

Authors   : Ivanov, V. I. and B. M. Sarychev, Engs.

Title   : Establishing the smallest spacing between conductors
                along a span

Periodical   : Elek. sta., 8, 42, Ag 1955

Abstract   : The authors consider cases where conductors,
                fastened to two towers are strung under a different
                angle and give a mathematical analysis for the
                computation of the smallest spacing. Two diagrams.

Institution : None

Submitted   : No date

IVANOV, V. I.

Vsesoyuznyy nauchno-issledovatel'skiy institut gidromashinostroyeniya

Issledovaniya i raschety gidroturbin i regulyatorov (Investigation
    and Design of Hydraulic Turbines and Regulators) Moscow, Mashgiz,
    1958. 129 p. (Series: Its: Trudy, vyp. 21) 4,000 copies printed.

Ed.: Kvyatkovskiy, V.S., Doctor of Technical Sciences, Professor;
    Ed. of Publishing House: Prokof'yeva, L.G.; Tech. Eds: Shikin,
    S.T. and Gerasimova, Ye.S.; Managing Ed. for Literature on Ma-
    chine Building and Instrument Construction (Mashgiz): Pokrovskiy,
    N.V., Engineer.

PURPOSE: This book is intended for engineers, technical workers,
    and graduate students and also for upperclassmen of vuzes and
    tekhnikums studying problems of hydraulic turbine building.

COVERAGE: This is a collection of articles dealing with investiga-
    tions of hydraulic turbines and regulators and their design. The
    following subjects are covered: results of model testing of im-

Card 1/3

Investigation and Design   (Cont.)   1065

pulse and reaction (axial) hydraulic turbines, theoretical investigations and calculations on hydraulics of rotors of axial and radial-axial (mixed flow) hydraulic turbines, characteristics of cavitational and starting regimes of axial hydraulic turbines, and analysis and calculations of dynamics of speed regulators of hydraulic turbines.

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IVANOV V.I.

EVREINOV, Mikhail Grigor'yevich, doktor.tekhn. nauk, red.; GREBENNIKOV, A.F.;
IVANOV, V.I.; LAVRENT'YEV, A.I.; OSETROV, P.A.; HUBTSOV, P.A.;
VASKHNIL, akademik, red.; SAPAROVA, A.L., spets. red.; ZUYEVA, K.N.,
red.; MAKHOVA, N.N., tekhn. red.; FEDOTOVA, A.F., tekhn. red.

[Use of electric power in agriculture] Primenenie elektricheskoi
energii v sel'skom khoziaistve. Moskva, Gos. izd-vo sel'khoz.
lit-ry, 1958. 499 p.   (MIRA 11:7)

1. Deystvitel'nyy chlen Akademii nauk SSSR.(for Vaskhnil).
                    (Electricity in agriculture)

IVANOV, V.I.; RYZHOV, P.I.; SIROTKO, V.K.

Investigation of relay protection by means of an electrodynamic
model of power systems of the IEM of the Academy of Sciences of
the U.S.S.R. Nauch.dokl.vys.shkoly; energ. no.3:187-192 '58.
(MIRA 12:1)

1. Institut elektromekhaniki AN SSSR.
              (Power engineering--Models)

IVANOV, V.I.

DROZDOV, A.D., kand.tekhn. nauk; IVANOV, V.I., doktor tekhn. nauk.

Review of G.I. Atabekov's book "Theoretical principlos of relay
protection of high-voltage networks." Elek. sta. 29 no.2:95-96
F '58.
(MIRA 11:3)

(Electric relays)   (Electric power distribution)
(Atabekov, G.I.)

IVANOV, V.I., doktor tokhn.nauk, prof.; MATKHANOV, P.N., dots.

Calculating cascade connections of pulse transformers. Izv.vys.
ucheb.zav.; energ. 2 no.5:1-9 My '59.   (MIRA 12:10)

1. Leningradskiy elektrotekhnicheskiy institut im. V.I.Ul'yanova
(Lenina).
                (Electric transformers)

IVANOV, V.I., inzh.

Ignitron cooling system on F-series electric locomotives. Elek. i
tepl. tiaga 4 no.10:33-38 O '60.   (MIRA 13:10)
          (Electric locomotives--Cooling)

IVANOV, V.I., inzh.

Automatically controlled ignitron cooling system of a.c.
powered N60 electric locomotives. Elek.i tepl.tiaga. 4
no.6:38-41 Je '60.   (MIRA 13:8)
        (Electric locomotives)
        (Electric current rectifiers--Cooling)

KAS'YANOV, A.V.; IVANOV, V.I.; KHIL'KOVSKAYA, Ye.P.; SERGEYEV, A.A.;
FILIPPOVA, L.S., red.; GROMOV, Yu.V., tekhn.red.

[Heat exchange systems of series N60 a.c.electric locomotives]
Teploobmennye ustroistva elektrovozov peremennogo toka serii
N60. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei
soobshcheniia, 1961. 22 p.   (MIRA 15:2)
            (Electric locomotives--Cooling)

TITLYANOVA, A.A.; IVANOV, V.I.

Absorption of cesium by three fresh-water plant species from
solutions of various concentration. Dokl. AN SSSR 136 no. 3:721-
722 Ja '61.

(MIRA 14:2)

1. Predstavleno akademikom A.M. Kursanovym.
   (Cesium) (Fresh-water flora) (Absorption (Physiology))

39051
S/124/62/000/007/016/027
D234/D308

10.1200

AUTHORS: Rolinskiy, V. Yu. and Ivanov, V. I.

TITLE: Method of averaging Reynolds' criterion with inhomo-
              geneous distribution of velocities in space and time

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 7, 1962, 78, ab-
              stract 7B532 (Tr. Nikolayevskogo korablestroit. in-ta,
              1961, no. 22, 71-75)

TEXT: The authors propose a method of averaging to obtain an aver-
age Reynolds' number in conditions of harmonic oscillating motion
of the medium, beginning with the condition that the average value
to be obtained must be equal to the value of Reynolds' number for
stationary flow past bodies securing the same heat flow as in os-
cillating motion. Averaging over 1/4 of a period one obtains the
following expressions: $R_{eff} = 0.562R_A$, R_{eff} being the corresponding
average value and R_A the amplitude of the actual Reynolds' number.
In the case of the velocity field being inhomogeneous in space the

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Method of averaging ...

averaging is made over the length of the cylinder placed in the flow with the same basic assumptions. $\underline{/}$ Abstracter's note: Complete translation. $\underline{/}$

Card 2/2

IVANOV, V.I.

"Dosimetric devices for X-rays and gamma rays." A.N.Krongaus.
Reviewed by V.I.Ivanov. Vest. rent. i rad. no.4:82-83 Jl-Ag '54.
    (X RAYS)   (GAMMA RAYS)   (MLRA 7:10)

IVAHOV, V.I.

Inadequacies in the new determination of the roentgen unit. Izm.
tekh. no.1:16-18 Ja-F '56.   (MLRA 9:5)
(X rays--Measurement) (Radiography) (Gamma rays--Measurement)

D-6

I VAN OV, V. I.,

Category : USSR/Atomic and Molecular Physics - Physics of high pressure

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 910

Author : Vereshchagin, L.F., Likhter, A.I., Ivanov, V.I.
Title : Production of Superhigh Pressures in a Setup Employing a Conical Piston

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 4, 874-877

Abstract : To eliminate packing gaskets, which are the weak point in super-high pres-
sure setups, a compression chamber was developed with a conical piston. The
conical piston is pressed into a carefully ground socket and normal pressure
is produced on the periphery of the cone. The cone angle is chosen to make
this pressure always greater than the pressure produced by the piston in the
liquid, thereby insuring hermeticity. The construction is described and
the design calculations (employing the theory of elasticity) are given for
the first version of such a setup. A pressure up to 14,000 kg/cm^2 was ob-
tained, the pressures being measured with a manganin manometer.

Sub { Physics { Superhigh Pressure, AS USSR

Card : 1/1

of Measurement and Research

Abs Jour : Ref Zhur - Fizika, No 5, 1958, No 10077

Author : Ivanov V.I.
Inst : Not Given
Title : Certain Problems in Dosimetry of Gamma Radiation

Orig Pub : An. Rom.-Sov. Ser. mat.-fiz., 1957, 11, No 3, 105-113

Abstract : No abstract

Card : 1/1

IVANOV, V. I., Cand Phys-Math Sci (diss) -- "Investigation of the ionization of liquids under the influence of X-rays". Moscow, 1959. 10 pp (Min Higher and Inter Spec Educ RSFSR, Moscow Eng-Phys Inst), 100 copies (KL, No 10, 1960, 125)

IVANOV, V.I., Cand Tech Sci — (diss) "Study and calibration of measuring systems with capacitive converters." Mos, 1959. 12 pp incl cover (Min of Higher Education USSR. Mos Order of Lenin Aviation Inst im Sergo Ordzhonikidze). 160 copies (KL, 39-59, 104)

PHASE I BOOK EXPLOITATION   807/3599

Sbornik radiotekhnicheskikh i dozimetricheskikh metodik (Collection of Radio-Chemical and Dosimetric Methods) Moscow, Medgiz, 1959. 459 p. Errata slip inserted. 9,000 copies printed.

Eds. (title page): N.G. Guser, U.Ya. Margulis, A.M. Marey, N.Yu. Tarasenko, T.M. Shukkenberg; Ed. (inside book): V.I. Labazov; Tech. Ed.: A.I. Zakharov.

PURPOSE: The collection of articles is intended for physicists, sanitation and public health doctors, chemists and other specialists working in radioactive dosimetry.

COVERAGE: This work discusses the following subjects: (1) principles of organizing sanitation and dosimetric control in institutions where work is carried on with radioactive substances; (2) radio-chemical and chemical methods for determining certain radioactive substances in samples of air, water, soil and foodstuffs; (3) physical methods of measuring contamination of the air by radioactive gases and aerosols, and methods for determining the level of contamination of working surfaces, clothes and under coverings; (4) methods of measuring external stream of X- and gamma-radiation, and methods of in-dividual dosimetric monitoring; (5) Absolute and relative methods of measuring the activity of solid and liquid radioactive sources. There are four appendices dealing with methods of calculating the total dosage from sources of ionizing radiation, units of activity, and doses from natural (background) radioactivity, permissible level of ionizing radiation. The editors thank Yu.V. Sivintsev and D.P. Osanov. Reference types at the end of each chapter.

AVAILABLE: Library of Congress

Card 11/11   TM/mas 6-2-60

SOV/89-7-1-15/26

AUTHOR: Ivanov, V. I.

TITLE: The Spatial Distribution of Ions in a Liquid
               (Prostranstvennoye raspredeleniye ionov v zhidkosti)

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 1, pp 73-74 (USSR)

ABSTRACT: Several papers (Refs 1-3) already investigated the influence
               exercised by the ionizing particles and by the nature of the
               irradiated medium upon the ion distribution in it. Essentially,
               ion distribution is determined by the nature of the traces of
               the ionizing particles, which is especially marked in the case
               of liquids (greatest ion density along the traces). After
               irradiation of longer duration, it may be assumed that part of
               the ions is distributed uniformly over the entire irradiated
               volume, whereas the other part is concentrated in so-called
               cells. These cells are of spherical or cylindrical shape
               (between a sphere and a cylinder). In the present "Letter to the
               Editor" the author investigates the concentrations of these
               two parts and also the influence exercised by irradiation
               conditions upon the concentrations. For this purpose he proceeds
               from the assumption that, at the moment of their production, all
               ions are concentrated in homogeneous cells of the volume V_0.

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The Spatial Distribution of Ions in a Liquid   SOV/89-7-1-15/26

By recombination and diffusion, the concentration is supposed
to decrease to such an extent that, after the time τ, it is
equal to that of the background. In the following, explicit
formulas, according to which the final ion concentration in
cylindrical and spherical cells may be calculated, are deduced.
The formulas are more accurate than those obtained by Magi
(Ref 3). It was found that the relative concentration of the
background increases with an increase of the primary cell
volume and with radiation intensity; this may explain some of
the rules of liquid ionization chambers. There are 3 references,
1 of which is Soviet.

SUBMITTED: January 12, 1959

Card 2/2

Ivanov V I.

PHASE I BOOK EXPLOITATION   SOV/4524

Chelovek v usloviyakh vysotnogo i kosmicheskogo poleta; sbornik perevodov iz inostrannoy periodicheskoy literatury (Man Under Conditions of High-Altitude and Cosmic Flight; Collection of Translations From Foreign Periodical Literature) Moscow, Izd-vo inostr. lit-ry, 1960.   462 p.   No. of copies printed not given.

Translator (from German and English): I. I. Gurevich; Ed. (Title page): V. I. Ivanov, Doctor of Medical Sciences; Ed.: F. F. Kruglikov; Tech. Ed.: N. A. Iovleva.

PURPOSE: This book is intended for medical personnel working on problems of aviation and space medicine and for engineer-designers, scientific, and other workers in aviation and cosmonautics.

COVERAGE: The collection consists of 26 translations of periodical articles (20 American and 6 German) on problems of aviation and space medicine originally published in 1956 and 1958. Individual articles discuss problems of living conditions in cabins of flying vehicles, physiological stresses due to heat, acceleration, and noise, toxic hazards, decompression and cosmic irradiation.

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SOV/4524

Man Under Conditions (Cont.)

No personalities are mentioned. References accompany each
article.   5

Ivanov, V. I., Foreword

PART I. PROBLEMS OF AVIATION MEDICINE

Lombard, Ch. F. Atmosphere in the Cabin (Die Atmosphäre in der
Kabine, "Möglichkeiten und Grenzen des bemannten Fluges", 1956,   19
pp. 11-14)

Blockley, W. V. Combined Physiological Stresses (Kombinierte
physiologische Beanspruchungen, "Möglichkeiten und Grenzen des   24
bemannten Fluges", 1956, pp. 110-115)

Büttner, K.J.K., Heat Loads in Contemporary Aircraft (Therm-
ische Beanspruchungen im modernen Flugzeug, "Möglichkeiten und   31
Grenzen des bemannten Fluges", 1956, pp. 15-24)

Roth, H. P. Impact Load Action and Dynamic Reaction of the
Organism (Stosswirkung und dynamische Reaktion des Körpers,
"Möglichkeiten und Grenzen des bemannten Fluges", 1956, pp.   45
85-95)
Card 2/6

/5

IVANOV, V.I.

PHASE I BOOK EXPLOITATION   SOV/5717

Moscow. Inzhenerno-fizicheskiy institut.

Pribory i metody analiza izlucheniy; sbornik nauchnykh rabot, vyp. 2. (Apparatus and Methods for the Analysis of Radiation; Collection of Scientific Papers, no. 2) Moscow, Atomizdat, 1960. 166 p. 4000 copies printed.

Sponsoring Agency: Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya RSFSR. Moskovskiy inzhenerno-fizicheskiy institut.

Ed. (Title page): Ye. L. Stolyarova, Candidate of Physics and Mathematics;
Tech. Ed.: S. M. Popova.

PURPOSE: This collection of articles is intended for specialists in nuclear physics, dosimetry of nuclear radiations, and shielding.

COVERAGE: The articles were prepared by scientists of MIFI (Moscow Physics and Engineering Institute) and presented at the 1957 conference of the Institute. Brief annotations to the articles have been included in the Table of Contents. No personalities are mentioned. References follow each article.

Card 1/8

Apparatus and Methods for the Analysis   (Cont.)

Frolov, V. V. Thick-Wall Ionization Chamber for Measuring the Dose of High-
Energy (35-300 Mev) Bremsstrahlung
   It is shown that the electron balance required for measuring bremsstrahlung   91
   dosage in roentgens can be secured by choosing the thickness and material
   of the wall of the ionization chamber.

Ivanov, V. I. Calculation of Ionic Mobility in Dielectric Liquids
   A method is described for calculating the mobility of solvated ions .   106
   on the assumption that the mobility obeys Stokes law. The calculation
   results were in good agreement with experimental data. The results can
   be used in studying the possible application of liquid ionization chambers
   to dosimetric measurements.

Kovalev, Ye. Ye., and V. I. Popov. Determination of the Geometric Correction
Factor for a Cylindrical Ionization Chamber
   It is stated that the geometry in the experiment must be taken into   110
   account when measuring the dose rate of gamma radiation with a cylindrical
   chamber. A general equation for the correction of the geometric factor in

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69445

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S/139/60/000/01/020/041
E201/E491

AUTHOR: Ivanov, V. I.

TITLE: The Effect of Polarity in Liquid Ionization Chambers

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika,
            1960, Nr 1, pp 115-118 (USSR)

ABSTRACT: It is found that the magnitude of the ionization current
            in liquid ionization chambers depends on the sign of the
            voltage applied. The eff ct is due to the fact that the
            true potential difference applied to the liquid is not
            equal to the external potential difference but differs
            from it by a quantity which, in general, depends both on
            the external potential difference and the intensity of
            the radiation. The nature of the additional potential
            difference depends on experimental conditions and is not
            always clear. A partial manifestation of the presence of
            an additional potential difference is the appearance of
            an ionization current when the chamber is irradiated
            with X-rays with the external potential difference
            reduced to zero. This may be due to: 1) contact
Card 1/3   potential difference, 2) unequal ejection of electrons

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69446

The Effect of Polarity in Liquid Ionization Chambers

from the electrodes of the chamber and 3) unequal
conditions for positive and negative ions due to the
absorption of the primary radiation by the liquid. In
order to have a correct interpretation of ionization
measurements, it is necessary to know the above
additional voltage as a function of the external voltage
and the intensity of the incident radiation. The
present author has investigated this problem, using
plane parallel ionization chambers filled with non-polar
organic liquids. It was found that the current
measured with the external potential difference reduced
to zero is strictly proportional to the square root of
the intensity of the incident X-rays (Fig 1). It follows
that the corresponding residual potential difference is
independent of this intensity. Experiments show that the
additional potential difference which is equal to the
difference between the external and the true potential
differences remained constant throughout the experiment.
Card 2/3   It was found equal to that in the absence of the external

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The Effect of Polarity in Liquid Ionization Chambers

potential difference. In order to exclude the effect
of the polarity on the volt-ampere curve it is necessary
to take one half of the algebraic difference between
currents obtained with opposite signs to the external
applied voltage. The above results applied so long as
the saturation region is not reached. There are
3 figures and 2 Soviet references.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut
             (Moscow Technical Physics Institute)

SUBMITTED: March 18, 1959

Card 3/3

69447
S/139/60/000/01/021/041
E032/E414

24,6810

AUTHOR: Ivanov, V.I.

TITLE: The Effect of the Structure of the Ionization on the
         Volt-Ampere Characteristics of a Liquid Ionization Chamber

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika,
            1960, Nr 1, pp 119-123 (USSR)

ABSTRACT: A feature of the structure of the ionization in
            condensed media is the fact that the ions produced by
            each ionizing particle may be localized in isolated
            regions of space within which recombination takes place.
            In the case of heavily ionizing particles such as
            α-particles, protons and slow electrons, these localized
            regions of ionization are roughly cylindrical "columns"
            whose axis lies along the particle track. Such "columns"
            have been discussed in detail by Jaffe (Ref 1). As soon
            as they are formed, the "columns" begin to expand owing
            to diffusion. If the intensity of the radiation
            producing the ionization is sufficiently low, most of the
            ions in a given "column" will recombine before the overlap
            between the different "columns" takes place. In that case

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The Effect of the Structure of the Ionization on the Volt-Ampere
Characteristics of a Liquid Ionization Chamber

there is no recombination between ions belonging to
different "columns" and the ionization current is due
mainly to those ions which have been extracted by the
electric field from the "columns" and is characteristic
of them. The dependence of the current on the electric
field is given by Eq (1) (Jaffe's formula) where α is
the recombination coefficient, N_0 is the number of ion
pairs per unit length of a "column" at the time of its
foundation, D is the diffusion coefficient, i is the
ionization current corresponding to a field E, and
i_0 is the saturation current. The function $f(z)$ is
a complicated function in which z is proportional to
the square of the electric field. Well away from the
saturation region, and for sufficiently small z, the
function $f(z)$ is given by Eq (2). The higher the
intensity of the radiation, the greater the number of
ions which are distributed uniformly over the irradiated
region, and one may consider that new "columns" are
Card 2/5   formed on a background of a uniform ion concentration.

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The Effect of the Structure of the Ionization on the Volt-Ampere
Characteristics of a Liquid Ionization Chamber

Eq (1) cannot be used if the concentration of the
uniformly distributed ions cannot be neglected in
comparison with the ion concentration in the "columns".
In the limiting case of a uniform ionization, when the
usual volume recombination takes place, the dependence
of the ionization current on the potential difference
across the chamber is described by Eq (3) (Ref 2),
where U is the potential difference applied to the
chamber and R_0 is the resistance of the chamber when
U = O. The quantity C is a constant and depends on
the properties of the ionized medium. It is shown that
if the theory leading to Eq (3) is correct, then the
graph of the function $f(U) = 2R/(R_0 - 1)^2$ should be
a straight line, while if Jaffe's theory applies, the
equation $i^{-1} = \varphi(\ln U)$ should be a straight line. The
functions f(U) and $\varphi(\ln U)$ are defined by the
right-hand sides of Eq (la) and (3a), where R = U/i.

Card 3/5   Experiments indicate that neither of these relations will

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The Effect of the Structure of the Ionization on the Volt-Ampere
Characteristics of a Liquid Ionization Chamber

describe the volt-ampere characteristic of the liquid
ionization chamber away from the saturation region.
It has been established by the present author that
experimental data can be described by the expression

$$ i \ = \ U / (R_0 + U/\gamma i_0) \qquad (4) $$

where γ is a constant for a given chamber. The
experimental data leading to this result are plotted in
Fig 3. These data may be extrapolated to zero potential
difference across the chamber so that R_0 may be
determined. All the measurements were carried out in a
liquid ionization chamber having a plane parallel
geometry, the distance between the electrodes being
4.6 mm. It was found that $R_0 \sim i_0^{-1/2}$. It follows
from these results that under the above conditions the
main contribution to the ionization current is due to
the uniform background distribution. The paper is

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The Effect of the Structure of the Ionization on the Volt-Ampere
Characteristics of a Liquid Ionization Chamber

concluded with a discussion of how the "uniform
background" is formed. It is concluded that the
fraction of ion taking part in this uniform background
is given by Eq (7) where q_1 is the rate of formation
of the background ions and q is the rate of formation
of ions in general. Eq (7) shows that the fraction of
ions taking part in producing the uniform background
decreases with increasing potential difference across the
chamber. The equilibrium concentration of the background
ions is given by Eq (8) in which h is the distance
between the electrodes and K_1 and K_2 are the
mobilities of the positive and negative ions. There are
3 figures and 3 references, 1 of which is Soviet,
1 German and 1 English.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut
(Moscow Engineering Physics Institute)

SUBMITTED: March 18, 1959

Card 5/5

IVANOV, V.I.

Calculating ionic mobility in dielectric fluids. Sbor. nauch. rab.
MIFI no.2:106-109 '60.   (MIRA 14:3)
        (Dielectrics) (Electric discharges through gases)
        (Ions—Migration and velocity)

IVANOV, V.I.

Current drop following the cessation of ionization in a fluid ionization chamber. Izv.vys.ucheb.zav.;fiz. no.2:134-139 '60.
(MIRA 13:8)

1. Moskovskiy inzhenerno-fizicheskiy institut.
(Ionization chambers)

Card 3/3

AUTHORS: Galner-Averin, A. P., Galkor, T. L., Seuat'yanov, Yu. G.,
Krol, N. M., Ignpov, V. I., Baykov, I. G., Stakhorry,
B. A., Kiffanov, B. S., Kozlov, A. G.

TITLE: Investigation of a Used Fuel Element of the First Nuclear
Power Station

PERIODICAL: Atomnaya energiya, 1960, Vol. 8, No. 5, pp. 446 - 447

TEXT: In the present paper the authors give a report on investigations of
the isotope composition, the burnup and the state of the shells of
fuel elements of the Pervaya atomnaya elektrostantsiya (First Nuclear Po-
wer Station) of the Soviet Union. The fuel elements investigated had been
in operation for 1160 days. Carrying out of the remote investigations is
briefly described. A thin oxide film was found on the outer shells, but
no damage was observed. The outer diameter was measured by means of a re-
mote micrometer at various places, and certain deformations were found.
Averaged over the entire length of the element an increase of the diame-
ter from 14.11 ± 0.02 to 14.20 ± 0.02 mm was found. An investigation

Investigation of a Used Fuel Element of   8/089/60/008/05/03/008
the First Nuclear Power Station   B006/B056

of the inner shell showed that it had a brown deposit (about 1μ thick),
which was identified as an incrustation (and not a corrosion product
of steel). The burnup was determined according to the Ca137-activity,
which was separated chromatographically by the sample from the element;
this isotope was especially well suited because of its long half-life.
Fig. 1 shows the course of burnup along the element (from bottom to top).
The mean burnup amounted to 12.5%. In the case of samples which were
taken at a distance of 95 cm from the lower end of the element (range of
maximum burnup), the burnup was determined mass-spectrometrically. The
uranium content in three samples was 4.12%, which corresponds to a burn-
up of 16.1%. Fig. 2 shows the distribution of the entire α-, β-, and
γ-activities along the element (from bottom to top). The transuranium-
isotope content was determined according to the alpha spectra and the
number of spontaneous fissions. Fig. 3 shows the distribution of the
isotopes Pu240, Pu239, and Pu238 along the fuel element. The
Pu238,239,240,241 and Au241 content is given in a Table (2.5×10⁻⁴, 1.20,
0.102, 1.22·10⁻², 1.86·10⁻³), and is compared with several theoretical

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the First Nuclear Power Station   B006/B056

data. The authors finally thank G. M. Kukavadze and R. N. Ivanov for the
mass-spectroscopic analysis of the irradiated uranium, and V. N. Shargrov
for calculating the isotope composition. There are 3 figures, 1 table, and
2 references: 1 Soviet and 1 American.

SUBMITTED: January 28, 1960

S/081/62/000/012/012/063
B168/B101

AUTHORS: Cherdyntsev, V. V., Orlov, D. P., Isabayev, Ye. A., Asylbayev,
             U. Kh., Ivanov, V. I., Usatov, E. P., Borisenko, T. I.

TITLE: Variations in the isotopic composition of natural uranium

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 12, 1962, 115, abstract
             12G16 (Tr. 9-y sessii Komis. po opredeleniyu atsolyutn.
             vozrasta geol. formatsiy, 1960, M.-L., AN SSSR, 1961, 306 - 312)

TEXT: The $U^{235} : U^{238}$ ratio in 14 different minerals was determined by
α-spectrometry and neutronometry. Some minerals show a U^{235} surplus :
quartz lode $U^{235} : U^{238} = 1.6 \pm 0.1$ (α-spectrum), magnetite 1.5
(α-spectrum) and 1.35 (neutronometry). In the remaining 12 minerals the
observable effect of disturbance of the isotopic composition does not go
beyond the limits of the experimental error. [Abstracter's note: Complete
translation.]

Card 1/1

S/058/63/000/002/008/070
A059/A101

AUTHOR: Ivanov, V. I.

TITLE: A dosimeter of mixed gamma-neutron radiation

PERIODICAL: Referativnyy zhurnal, Fizika, no. 2, 1963, 72, abstract 2A478
               ("Sb. rabot po nekotorym vopr. dozimetrii i radiometrii ionizir.
               izlucheniy", no. 2, M., Gosatomizdat, 1961, 121 - 124)

TEXT: The possibilities of developing a device are discussed which would
permit to measure the neutron and γ-ray doses in mixed flow simultaneously with
one pickup, with allowance being made for the relative biological effectiveness
of these kinds of radiation. A way is suggested which involves the application
of a proportional counter as the pickup of such a dosimeter. The idea of the
method is based on the fact that pulses produced in the proportional counter due
to protons have, on an average, a greater amplitude than pulses due to electrons.
The block diagram of a dosimeter is given in which this principle is applied,
and the functions of the individual units of the dosimeter are described in de-
tail. An examination of the applicability of the method suggested was performed

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A dosimeter of mixed gamma-neutron radiation

S/058/63/000/002/008/070
A059/A101

on a dosimeter model with the proportional counter filled with BF_3. The usual counter CHM-5 (SNM-5) surrounded by a paraffin layer for slowing-down neutrons from a Po-Be source was used. It was established that the pulses arising in the counter during the capture of thermal neutrons are markedly greater than the pulses arising due to the action of γ-rays. The results of the examination performed with Po-Be neutron sources and radium as the γ-source showed the full applicability of the suggested method for dosimetric purposes. Rough estimates of the accuracy of the method were made.

L. S.

[Abstracter's note: Complete translation]

Card 2/2

26366
S/089/61/011/002/002/015
B102/B201

2/. 2 2oo

AUTHORS: Smirnov-Averin, A. P., Galkov, V. I., Ivanov, V. I.,
            Meshcheryakov, V. P., Sheynker, I. G., Stabenova, L. A.,
            Krot, N. N., Kozlov, A. G.

TITLE: Study of a used fuel rod from the First Nuclear Power Station

PERIODICAL: Atomnaya energiya, v. 11, no. 2, 1961, 122-125

TEXT: This is the second part of a paper, the first having been published in
"Atomnaya energiya" v. 8, no. 5, 1960, 446. Results of studies of used fuel
rods from the Pervaya atomnaya elektrostantsiya (First Nuclear Power Station)
are presented. The element jackets displayed no changes apart from some
oxide stains. A comparison between the diameters of a new fuel rod with one
after 104 and another after 445 effective burning hours showed that while
the diameter had not increased at the upper and lower rod ends, it had grown
by less than 0.2 mm in the middle. In order to measure the total $\alpha-$, $\beta-$,
and $\gamma-$activity, the used fuel rod was divided lengthwise into 10 sections,
and each of these parts was dissolved in nitric acid. The $\alpha-$activity was
determined by a Дa-49 (Da-49) standard device and an ionization chamber, the

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Study of a used fuel rod from the ...

β-activity by a 4π-counter, the γ-activity by an ionization chamber as compared to a radium standard. The activity of the inner and outer tubes bounding the fuel element was also measured; these tubes were made of stainless steel. In the midile, the activity of the outer tube was 30% higher than that of the inner tube. This effect can be explained by the change of the neutron spectrum along the diameter of the fuel element. The burn-up in the used fuel elements was determined on the strength of the absolute activity of cesium which was separated by an ion exchanger. The results of a radiometric determination of the burn-up were compared with mass-spectrometric results, and agreement was found to be good. The mean burn-up of the entire element was found to be equal to 53%. Finally, the isotopic composition of transuranic elements was also determined in the used-up fuel. The first part of the present paper has supplied the results of a radiometric determination of the isotopic composition in case of a 12.5% burn-up of the element. The results of a mass-spectrometric analysis are now given. The substance under investigation was to the emitter (tungsten foil, 40 μ) in the form of an aqueous nitrate solution. A thermal ion source served for the purpose. Results are presented in Fig. 5. They were used to calculate the mean values of isotopic composition. The

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Study of a used fuel rod from the ...

following was found (in kg/ton of uranium): Pu^{239} - 4.10; Pu^{240} - 1.53; Pu^{241} - 0.64; Pu^{242} - 0.20; Cm^{242} - 2.73·10^{-3}. There are 5 figures and 2 Soviet-bloc references.

SUBMITTED: September 13, 1960

Fig. 5: Isotopic composition of transuranic elements along the fuel element.
Legend: Ordinate: isotopic concentration in kg/ton of U; abscissa: length in cm; (1) bottom; (2) top.

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IVANOV, V.I.

/3
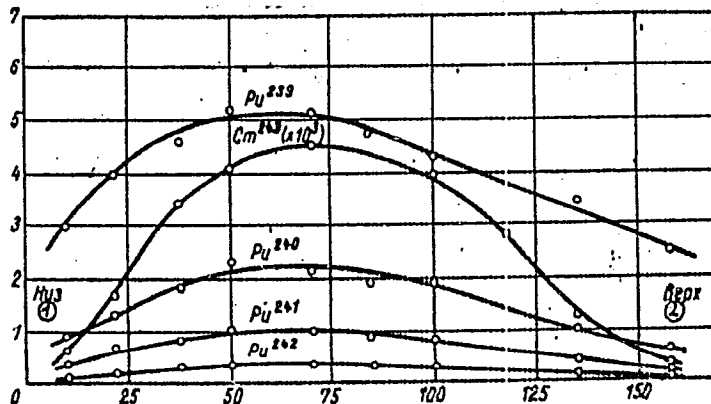
21./000

AUTHORS: Leypunskiy, A. I., Abramov, A. I., Aleksandrov, Yu. A.,
Anikin, G. V., Bondarenko, I. I., Guseynov, A. G.,
Ivanov, V. I., Kazachkovskiy, O. D., Kuznetsov, V. F.,
Kuz'minov, B. D., Morozov, V. N., Nikolayev, M. N.,
Sal'nikov, O. A., Smirenkin, G. N., Soldatov, A. S.,
Usachev, L. N., Yutkin, M. G.

TITLE: Investigation of the БР-5 (BR-5) fast reactor (spatial and
energy distributions of neutrons)

PERIODICAL: Atomnaya energiya, v. 11, no. 6, 1961, 498 - 505

TEXT: The fast research reactor BR-5 and its experimental equipment is
described in brief and some of its neutron spectra are given and discussed.
The following data are given: fuel - plutonium oxide; coolant - sodium;
reflector - thin layer of natural uranium plus thick layer of nickel;
power - 5000 kw. The reactor has many vertical and horizontal holes for
technical and physical studies and is well supplied with experimental
equipment. Leypunskiy gave a detailed description of the BR-5 reactor at   X

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Investigation of the...

S/089/61/011/006/002/014
B102/B138

the Second Geneva Conference (1958). Inside the core the neutrons have energies of more than 100 kev which they lose almost completely in passage through reflector and shield. In the outer layers of the shield, their mean energy does not exceed some tens of ev. In the kev range ($E_n > 50$ kev) spectra were measured for the most important beams and channels. For the other cases, they were determined from threshold reactions. The soft part of the spectrum within the reflector was determined from the spatial distribution of neutrons with $E_n < 5$ ev, recorded with gold resonance indicators. The total neutron flux was determined only at the points where the Pu^{239} fission cross section was constant. Direct neutron spectrum measurements were carried out in a vertical (OK-70) and a horizontal (B-3) channel using ($He^3 + Ar$)-filled ionization chamber in the first case and the neutron transmission method with n-hexane in the second. The neutron spectrum of the horizontal channel was also determined by photoemulsions. From the rates of indicator and fission reactions $Au^{197}(n,\gamma)$, $U^{235}(n,f)$ $Pu^{239}(n,f)$, $Th^{232}(n,f)$, $Na^{23}(n,\gamma)$ $Cu^{63}(n,\gamma)$, and $Al^{27}(n,\alpha)$ the abrupt

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B102/3138

Investigation of the...

drop in neutron energy in the Ni reflector was determined, and the
activity caused by resonance neutrons (E_n = 4.9 ev). The fast neutron
flux ($E_n > 1.4$ Mev) in the core center was found to be $(2.4 \pm 0.2) \cdot 10^{14}$,
and total flux was $(8.2 \pm 0.3) \cdot 10^{14}$. Experimental results were verified
by energy-group calculations (18 groups). Good agreement between theory
and experiment was also found for the channel spectra. The authors
thank D. S. Pinkhasik, N. N. Aristarkhov, and the reactor personnel for
assistance. There are 10 figures, 2 tables, and 2 Soviet references.

SUBMITTED: August 17, 1961

Table 1.   Reaction cross sections in the core center.

Legend: (1) Reaction; (2) experiment; (3) σ calculated, given in barns.

Fig. 7.. Neutron transmission spectrum (n-hexane) for the horizontal
          channel B-3.

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B102/B138

21.6000

AUTHORS: Golubev, V. I., Ivanov, V. I., Nikolayev, M. N.,
              Smirenkin, G. N.

TITLE: Use of resonance indicators for investigating neutron spectra
              in fast reactors

PERIODICAL: Atomnaya energiya, v. 11, no. 6, 1961, 522 - 527

TEXT: The authors studied the possibilities of using resonance indicators
for investigating the low-energy part of neutron spectra in the reflectors
of fast reactors. The resonance blocking method is discussed in detail.
In this case, the indicator foil is covered on both sides by thin
shielding layers, except in the vicinity of resonance at $E = E_o$.

Resonance neutron flux can be calculated by measuring the activity differ-
ence

$$\Delta A = \varphi(E_0) \frac{\pi}{2} \Gamma_\gamma \Sigma_{0,\,a} \eta +$$
$$+ 2t \int \Sigma_a(E) \Sigma_c(E) \left\{ 1 - \frac{1}{2} \times \right.$$
$$\left. \times Ei[-\Sigma_c(E)t] \right\} \varphi(E) dE.$$

(1)

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Use of resonance indicators...

of the resonance parameters, for determining blocking factor η are known. $\varphi(E)$ is neutron flux, Γ_γ the radiation width, $\Sigma_{o,a}$ activation cross section in the resonance maximum, Σ_a and Σ_c activation cross section of the indicator isotope and total absorption cross section of the indicator respectively. η is calculated on the basis of the Gurevich-Pomeranchuk theory of resonance absorption (e. g., G. I. Marchuk, Chislennyye metody rascheta yadernykh reaktorov (Numerical methods for reactor calculation), M. Atomizdat, 1958). With $\beta = \Sigma_o^{'} t$ and $\beta_o = \Sigma_o^{'} t_o$, the ratios between filter thickness t and indicator thickness t_o and the "draw-out-length" of neutrons from the resonance region $I/\Sigma_o^{'}$, corresponding to its maximum,

$$\eta(\beta, \beta_0) = f(\beta_0) - f(\beta)\left(2 + \frac{\beta_0}{\beta}\right) +$$

$$+ \frac{e^{-\frac{\beta}{2}}}{\beta}\left[\left(\beta + \beta_0 - \frac{\beta_0^2}{12} + \frac{\beta_0^3}{192}\right)I_0\left(\frac{\beta}{2}\right) + \quad\quad (6)$$

$$+ \left(\beta + \frac{\beta_0}{2} + \frac{\beta_0^2}{12} - \frac{\beta_0^3}{192}\right)I_1\left(\frac{\beta}{2}\right)\right].$$

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Use of resonance indicators...

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is found. This relation is used for calculating the blocking factors (cf. Table 1). I_0 and I_1 are zeroth and first-order Bessel functions of an imaginary argument. Good indicators will show a broad energy gap between first and second resonance activation cross sections. Table 2 gives the characteristic parameters of several isotopes which are recommended as indicators. Only for In^{115}, Au^{197} (broad resonance) and La^{139} (narrow

resonance), the relation $\Sigma_0' = \begin{cases} \Sigma_0 \text{ for } \Gamma \ll \xi E_0 \text{ (narrow resonance)} \\ \Sigma_0 \frac{\Gamma_\gamma}{\Gamma} \text{ for } \Gamma \gg \xi E_0 \text{ and } \Gamma \approx \Gamma_\gamma \text{ (broad resonance)} \end{cases}$

holds; for the others, Σ_0' has to be determined experimentally. If the contributions of higher resonances to the neutron spectrum are negligible, the activity induced by first-resonance neutrons may be determined by the so-called "1/v law". This method is demonstrated for two isotopes, the first of which has resonance at $E = E_0$, the second one obeys the 1/v law ($B^{10}(n,\alpha)$). The neutron flux is determined from

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Use of resonance indicators...

$$\varphi(E_0) = \frac{A_1 - A_2 \frac{\Sigma_{a,1}^m}{\Sigma_{a,2}^m} \frac{\zeta_1}{\zeta_2}}{\frac{\pi}{2} \Gamma_\gamma \Sigma_0 \zeta_1}.$$ (8).

This method was used to determine the flux distributions of the 4.9-ev resonance neutrons in the reflector of the БР-5 (BR-5) reactor. A gold foil of 1.38 mg/cm^2 (β_0 = 0.14) with gold filters of 3.05 and 6.10 mg/cm^2 (β = 0.31 and 0.62) was used. Results are shown graphically and discussed in brief. The 2.95-kev neutron flux in the Ni reflector of a БР-1 (BR-1) reactor was also measured by this method, using a Na$_2$CO$_3$ indicator foil as 1/v detector. The authors thank A. I. Leypunskiy for interest, and I. I. Bondarenko and V. V. Orlov for discussions. There are 4 figures, 2 tables, and 4 Soviet references.

SUBMITTED: April 17, 1961

Card 4/

ZHAROV, V.F.; IVANOV, V.I.; MONZA, A.Kh., polkovnik, red.; NEPODAYEV,
Yu.A., red.; KOKINA, N.N., tekhn. red.

[Missiles and anitimissile defense; translated articles]Ra-
kety i protivoraketnaia oborona; sbornik perevodnykh statei.
Predisl. i red. A.Kh.Monza. Moskva, Voenizdat, 1962. 225 p.
(MIRA 15:10)

(Rockets (Ordnance)) (Guided missiles)

45450
S/892/62/000/001/013/022
B102/B166

21.6000
AUTHORS: Ivanov, V. I., Troshin, V. S.

TITLE: Calculation of the characteristics of a proportional counter
                for dosimetry of mixed gamma-neutron radiation

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii
                i zashchity ot izlucheniy, no. 1, 1962, 84-89.

TEXT: The main disadvantage of Herst dosimeters with proportional
counters for γ-n dosimetry consists in the sub-barrier losses due to
pulse discrimination. The errors caused by these losses are estimated
for a spherical counter under the following assumptions: the counter
walls and the filling gas have the same atomic composition; the counter
dimensions are small in comparison with the mean free paths of protons
and electrons in the filling gas; the radiation flux is isotropic; the
specific ionization of the particles inside the counter remains constant;
absorption in the walls is negligible; ionization due to recoil protons
and electrons originating in the counter walls is taken into account.
The proton pulse-height spectrum is calculated. It is obtained as

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B102/B186

Calculation of the characteristics...

$$dN/d\sigma = \int_{\sigma_{min}}^{\sigma_{max}} k(\sigma)\varepsilon\, d\sigma, \text{ where } k(\sigma)d\sigma = -\frac{\pi n_o}{2\varrho^3}\left[1 - \frac{E(\sigma)}{E_o}\right]\alpha\beta\sigma^{\beta-1}d\sigma; \; E = \alpha\sigma^\beta$$

characterizes the dependence of the proton energy and the specific ionization - an approximation that causes an error not above 10% for $\beta = -1.4$ and $\log\alpha = 3.265$. $\varepsilon = \sigma l$ is the total ionization, proportional to the pulse height; ϱ is the density of the wall material, n_o the total number of protons produced per cm^3 of the wall material, E_o the neutron energy; σ_{min} and σ_{max} are the minimum and maximum values of specific ionization, so that σ_{min} is the maximum energy of protons produced in the wall. If dn denotes the number of pulses with amplitude between ε and $\varepsilon+d\varepsilon$, then $dn/d\varepsilon = \varepsilon k(\sigma)d\sigma$. If the difference in proton contribution in the two ε ranges is taken into account,

$$\frac{dN}{d\varepsilon} = \alpha\beta\,\frac{\pi n_o}{2\varrho^3}\,\varepsilon\left[\left(\frac{\sigma_{min}^{\beta-3}}{\beta-3} - \frac{\alpha}{E_o}\frac{\sigma_{min}^{2\beta-3}}{2\beta-3}\right) - \left(\frac{\sigma_{max}^{\beta-3}}{\beta-3} - \frac{\alpha}{E_o}\frac{\sigma_{max}^{2\beta-3}}{2\beta-3}\right)\right]; \quad (9)$$

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32009
S/089/62/012/001/012/019
B102/B138

2/. 5210

AUTHORS: Galkov, V. I., Ivanov, V. I., Smirenkin, G. N.,
                Smirnov-Averin, A. P.

TITLE: Investigation of the uranium rod assembly of the БР-5
                (BR-5) reactor

PERIODICAL: Atomnaya energiya, v. 12, no. 1, 1962, 56-57

TEXT: Some characteristics and parameters of a uranium-rod assembly
exposed to a $5 \cdot 10^{21}$ neutron flux in a BR-5 reactor have been determined.
The BR-5 reactor uses plutonium as fuel and uranium as reflecting
material; the reflector consists of 3 cm natural uranium + 30 cm nickel.
The middle of the assembly studied was 12.6 cm off the reactor center.
The distributions of the absolute number of fission events in the uranium
and of the capture events in U^{238} were determined for the length of the
assembly (28 cm), the first from the absolute activity of Cs^{137}, and the
second from the Pu-concentration in the uranium, i.e. its specific
α activity. From the Pu separated from the assembly, the Pu^{240} content

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Investigation of the uranium rod...

(~ 0.1 %) was determined by comparing the intensities of spontaneous fissions in sample and standard. Correction (~ 5 %) was made for the spontaneous fissions of Pu^{238}. From the Pu^{240} content in plutonium and the Pu^{239} content in uranium, the mean ratio of the capture cross sections of Pu^{239} and U^{238} was calculated. With 1.81 ± 0.15 it was not far from 1.93, the value calculated by multi-group theory (18 groups). From the mean cross sections of 0.23 b (U^{238}, capture) and 2.18 b (Pu^{239} fission) the mean capture cross section for Pu^{239} ($\sigma_c = 0.415 \pm 0.035$ b) and $\alpha = \sigma_c/\sigma_f$ can be determined ($\alpha = 0.19 \pm 0.02$). α is the ratio of the mean cross sections of radiative capture and fission. The α-values determined in dependence on energy agree with those found by V. N. Andreyev (Atomnaya energiya, 4, vyp. 2, 185 (1958)). The authors thank A. I. Leypunskiy, O. D. Kazachkovskiy and I. I. Bondarenko for their interest, and M. K. Golubeva, V. I. Moiseyev, A. S. Tishin, and Yu. M. Turchin for assistance. There are 2 figures and 4 Soviet references.

SUBMITTED: August 16, 1961

Card 2/2

IVANOV, V. I.

INTERNATIONAL ATOMIC ENERGY AGENCY, (IAEA)
Symposium on Neutron Detection, Dosimetry
and Standardization - Harwell, England,
10-14 December 1962

DOROSHENKO, G. G., GLAGOLEV, V. I., BARABANOV,
I. R., and FILEYUSHKIN, I. V. - "A new
method for studying continuous fast neutron
spectra - the counting efficacies method"
(Section I.1.(4))

DOROSHENKO, G. G., and Ye. L. STOLYAROVA
[STOLYAROVA in 1960 was a member of the
Moscow Engineering Physics Institute] -
"A new method for separating pulses from
fast neutrons and Y quanta" (Section III)

IVANOV, V. I. - "A modified procedure for
using the Hurst type proportional counter
for dosimetry of mixed Y-neutron radiation"
(Section III)

VASHKOVICH, Vadim Pavlovich - "The spectro-
metric method and the attenuation-curve
analysis method for determining the activity
of threshold indicators" (Section I.3.(2))

STOLYAROVA, Ye. L. [in 1960 was a member of
the Moscow Engineering Physics Institute] -
"Methods of fast-neutron spectrometry and the
opportunities for their use in neutron
dosimetry" (Section II.)

ZIELEZNSKI, M. [ZIELEZNSKI is listed in the
program as a USSR author; he may, however, be
Mieczyslaw ZIELINSKI who in 1958 was at
Warsaw University, Poland] - "Recombination
method of linear energy transfer (LET)
determination of mixed adiation" (Section V)

ZOLOTUKHIN, V. G., DOROSHENKO, G. C., and
YEFIMENKO, B. A. - "Calculation of pulse-
height distributions and counting efficiencies
of a fast-neutron scintillation detector"
(Section I.2)

S/560/62/000/012/004/014
I063/I263

AUTHORS: Ivanov, V.I., Keirim-Markus, I.B., and Kovalev, Ye.Ye.

TITLE: Cosmic radiation doses

SOURCE: Akademiya nauk SSSR. Iskusstvennyye sputniki Zemli,
             no.12, 1962, 35-46

TEXT: Data on primary cosmic radiation, radiation from solar out-
bursts and radiation belts surrounding the earth above the atmos-
phere, previously published in Soviet and Western scientific papers,
are studied in relation to man's flight in space. These are used
as a basis for a theoretical calculation of the "biological doses"
within and outside a space-ship. The "biological dose" of radiation
is determined by: 1) the quantity of radiation absorbed by a given
tissue and 2) the relative effectiveness of the radiation depending
on its nature. Conclusions are drawn as to the required thickness
of a protective aluminium shell, concerning the daily dose of natur-
al radiation absorbed by man on earth, and the safe limit of pro-
fessional irradiation.

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S/560/62/000/012/004/014
I063/I263

Cosmic radiation doses

The "biological dose" of each component of the primary cosmic radia-
tion is calculated on the basis of data on the linear density of
energy loss of this radiation in NaI (Vernov, S.N., Chudakov, A.Ye.
et al., Rep. Akademiya nauk SSSR, 125, 304, 1959.)
The power of the penetrating radiation of solar outbursts is cal-
culated according to the formula:

$$P_{ion} = 1.60 \times 10^{-8} \cdot 3600 \int_r^\infty \phi \; (R + R_1) \; S \; (R) dR (rad/hour^{-1}),$$

where P_{ion} = power of the absorption dose connected with ionization
losses of protons, $\phi (R)dR$ = proton flux with path from R to R+dR
(in g.cm^{-2}), $S(R)$ = ionization loss of protons with path R, R_1 =
thickness of the absorber.
Assuming an exponential function for the energetic spectrum of pro-
tons and using an approximate relation between E and R, the maximal
biological doses absorbed by an organism within a space-ship are
determined for different thicknesses of the protective shell. A
similar formula is used for the power of the internal radiation belt

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S/560/62/000/012/004/014
I063/I263

Cosmic radiation doses

surrounding the earth. Here the doses are calculated also outside
the space-ship where electrons and low-energy protons must be taken
into account.
A protective shell of 1 g.cm.$^{-2}$ aluminium is sufficient against the
electrons of the external radiation belt, but a Bremsstrahlung is
produced at the walls of the ship. Its intensity in the center of a
container is calculated theoretically and the results are compared
with direct measurements performed by means of a scintillator in the
first Soviet rocket (Vernov, S.H., Chudakov, A.Ye., U.F.N. 70, 585,
1960). A satisfactory agreement is obtained if the energies of the
high-energy electrons in the external radiation belt are more than 2
MeV. There are 2 tables. The most important English language re-
ferences are:
J.A. Van Allen, L.A. Frank, Nature, 183, 430, 1959.
J.A. Van Allen, L.A. Frank, Nature, 184, 219, 1959.
D.D. Kerlee, O.K. Krienke, Phys.Rev. 115, 137, 1959.
E.P. Ney, J.R. Winckler, P.S. Freier, Phys.Rev.Lett. 3, 183, 1959.

SUBMITTED: May 30, 1961

Card 3/3

IVANOV, V. I.   95

8/089/62/013/006/019/027
B102/B186

AUTHORS: G. T. and M. R.

TITLE: Nauchnaya konferentsiya Moskovskogo inzhenerno-fizicheskogo
             instituta (Scientific Conference of the Moscow Engineering
             Physics Institute) 1962

PERIODICAL: Atomnaya energiya, v. 13, no. 6, 1962, 603 - 606

TEXT: The annual conference took place in May 1962 with more than 400
delegates participating. A review is given of these lectures that are
assumed to be of interest for the readers of Atomnaya energiya. They are
following: A. I. Leypunskiy, future of fast reactors; A. A. Vasil'yev,
design of accelerators for superhigh energies; I. Ya. Pomeranchuk,
analyticity, unitarity, and asymptotic behavior of strong interactions at
high energies; A. B. Migdal, phenomenological theory for the many-body
problem; Yu. D. Piveyskiy, deceleration of medium-energy antiprotons in
matter; Yu. M. Kogan, Ya. A. Iosilevskiy, theory of the Mössbauer effect;
M. I. Ryazanov, theory of ionization losses in nonhomogeneous medium;
Yu. B. Ivanov, A. A. Rukhadze, h-f conductivity of subcritical plasma;

Card 1/4

36

S/089/62/013/006/019/027
B102/B186

Nauchnaya konferentsiya...

Ye. Ye. Lovetskiy, A. A. Rukhadze, electromagnetic waves in nonhomogeneous plasma; Yu. D. Kotov, I. L. Rozental', the origin of fast cosmic muons; Yu. M. Ivanov, muon depolarization in solids; V. G. Varlamov, Yu. M. Grashin, B. A. Dolgoshein, V. G. Kirillov-Ugryumov, V. S. Roganov, A. V. Samoylov, μ^- capture by various nuclei; V. S. Demidov, V. G. Kirillov-Ugryumov, A. K. Ponosov, V. P. Protasov, F. M. Sergeyev, scattering of π^- mesons at 5 - 15 Mev in a propane bubble chamber; S. Ya. Nikitin, M. S. Aynutdinov, Ya. M. Selektor, S. M. Zombkovskiy, A. F. Grashin, muon production in π^-p interactions; B. A. Dolgoshein, spark chambers; N. G. Volkov, V. K. Lyapidevskiy, I. M. Obodovskiy, study of operation of a convection chamber; K. G. Pinogenov, production of square voltage pulses of high amplitudes; G. N. Aleksakov, problems of color vision; V. K. Lyapidevskiy, relation between number of receivers and number of independent colors; Ye. M. Kudryavtsev, N. M. Sobolev, N. I. Tisengausen, L. N. Tunitskiy, P. S. Fayzulov, determination of the moment of electron transition of os- oillator forces and the widths of the Schuhman-Runge bands of molecular oxygen; B. Ye. Gavrilov, A. V. Zharikov, V. I. Rayko, decomposition of the volume charge of intense ion beams; Ye. A. Kramer-Ageyev, Y. S. Troshin, measurement of neutron spectra; O. O. Doroshenko, new methods of fast neutron recording; V. I. Ivanov, dosimetry terminology; R. M. Voronkov,

Card 2/4

. G. BUDILOV, L. I. DORMAN, V. I. IVANOV, Ye. V. KOLMEYETS, L. Y. MIROSENIC. .

Small Flares and the Propagation of Solar Cosmic Rays in Interplanetary Space.

Report submitted for the 8th Intl. Conf. on Cosmic Rays (IUPAP), Jaipur India
2-14 Dec 1963

ACCESSION NR: AT4021261   S/2892/63/000/002/0133/0136

AUTHOR: Ivanov, V. I., Kolobashkin, V. N., Zharkov, V. P.

TITLE: On calculating the self-absorption and self-scattering of β radiation in gas

SOURCE: Voprosy* dozimetrii i zashchity* ot izlucheniy, no. 2, 1963, 133-136

TOPIC TAGS: self-absorption, self-scattering, β radiation, gas, gas pressure

ABSTRACT: The authors derive an experimental method of accounting for self-absorption and self-scattering of β radioactive gases. Their results are plotted in a graph together with adjustment for self-absorption according to the well known formula:

$$\eta = \frac{1 - e^{-\frac{\bar{\mu}\rho_0 H x}{(1 + \alpha t) \cdot 760}}}{\frac{\bar{\mu}\rho_0 H x}{(1 + \alpha t) \cdot 760}} \qquad (4)$$

Card 1/2

ACCESSION NR: AT4021261

where ρ_0 is the density of the gas 760 mm mercury and $0^\circ C$; x is the linear
dimensions of the measuring compartment, as well as the formula

$$\eta = e^{-\dfrac{\mu \rho_0 \, H \, x}{(1 + \alpha t) \cdot 760}}$$

(5)

The theoretical calculation and the adjustment according to the above formulas can
lead to an error of 20%. In each specific case, the authors obtain an empirical
formula for introducing the adjustment of self-absorption and self-scattering by
means of a graph. Orig. art. has: 9 formulas and 2 figures.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Physics and
Engineering Institute)

SUBMITTED: 00

SUB CODE: NS

DATE ACQ: 06Apr64

NO REF SOV: 003

ENCL: 00

OTHER: 001

Card 2/2

DORMAN, L.I.; IVANOV, V.I.; KOLOMEYETS, Ye. V.; KASHKAROV, I.Ye.

Effect of small bursts in the hard component of cosmic rays.
Geomag. i aer. 3 no.4:752-753 Jl-Ag '63.   (MIRA 16:11)

1. Kazakhskiy gosudarstvennyy universitet.

IVANOV, V.I.; KOSTOMAROV, D.P.

Calculation of the electric currents induced in the sea by the
Sq-variation of the geomagnetic field. Geomag. i aer. 3 no.6:
1079-1088 N-D '63.

(MIRA 16:12)

1. Moskovskiy gosudarstvennyy universitet, fizicheskiy fakul'tet.

KUZNETSOVA, A.G.; IVANOV, V.I.

Effect of sulfuric acid on the product of cohydrolysis of trimethylchlorosilane and methylphenyldichlorosilane. Plast.massy no.10:17-21 '63.

(MIRA 16:10)

IVANOV, V.I.

Symposium on the recording, dosage, and standardizing of neutrons.
Atom. energ. 14 no.5:506-508 My '63.   (MIRA 16:6)
(Neutrons)

L 3143-66   EWT(m)

AM5020747

BOOK EXPLOITATION UR/

621.039.58+577.391(076.1)

Ivanov, Viktor Ivanovich; Konstantinov, Igor' YEvgen'yevich; Mash-
kovich, Vadim Pavlovich

Collection of problems on dosimetry and protection from ionized
radiation (Sbornik zadach po dozimetrii i zashchite ot ioniziruyush-
chikh izlucheniy) Moscow, Atomizdat, 1964. 134 p. illus., biblio.
4500 copies printed.

TOPIC TAGS: radiation dosimetry, ionizing radiation, nuclear radi-
ation, radiation protection, radioisotope, radiation hazard

PURPOSE AND COVERAGE: This collection of problems is intended for
students and others concerned with radioisotopes, dosimetry, and
protection against nuclear radiation. The textbook contains about
400 fundamental problems and their answers on dosimetry and radi-
ation protection, together with the fundamental formulas and re-
lationships needed for the solution of these problems. Some com-
plex auxiliary problems are also included. Course materials, used
over a period of years in the Moscow Physics and Engineering In-

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L 3143-66

AM5020747

stitute, have been availed of in the compilation of this book. No
personalities are mentioned.

TABLE OF CONTENTS: [Abridged]

Card 2/3

L - .66

AM5020747

SUB CODE: :NPh:

OTHER: 008

SUBMITTED: 17Jun65   NO REF SOV: 022

Card 3/3

ACCESSION NR: AP4041340   S/0115/64/000/005/0006/0008

AUTHOR: Ivanov, V. I.

TITLE: High-frequency transformer sensor for small linear movements

SOURCE: Izmeritel'naya tekhnika, no. 5, 1964, 6-8

TOPIC TAGS: sensor, measurement sensor, hf transformer sensor, accelerometer, vibrometer

ABSTRACT: The design, functioning, and characteristics of a differential h-f sensor suitable for vibrometers and accelerometers are considered. Only a tuned type has a sensitivity high enough (60 mv/micron) to warrant changing from the conventional l-f to a h-f design. This sensitivity, enabling one to measure fractions-of-a-micron movements, and the absence of a magnetic circuit, which simplifies zero-drift compensation, are regarded as advantages of the h-f sensor. An extreme sensitivity to the supply-voltage frequency (about 100 kc) is regarded

Card 1/2

ACCESSION NR: AP4041340

as a disadvantage; the frequency error of the sensor can be brought under 0.2% if a quartz-stabilized h-f oscillator is used. However, even without the quartz stabilization, the sensor's zero signal was within 0.5—2 mv, according to the experimental data reported. Orig. art. has: 4 figures and 13 formulas.

ASSOCIATION: none

SUBMITTED: 00   ENCL: 00

SUB CODE: IE   NO REF SOV: 002   OTHER: 000

Card 2/2

SAMANLIYEV, A.Ya.; IVANOV, V.I.; SULTANOVICH, A.T.

Automatic control of the pumping of petroleum products.
Mash. i neft. obor. no.11:38-39 '64.
(MIRA 19:1)

1. Groznenskiy filial Vsesoyuznogo nauchno-issledovatel'skogo
i proyektno-konstruktorskogo instituta kompleksnoy avtomati-
zatsii neftyanoy i gazovoy promyshlennosti.

L 63628-65   EEC-4/EWG(j)/EWG(v)/EWA(h)/EWT(l)/EWT(m)/ECC/T   Pe-5/Pi-4/Po-4/
ACCESSION NR: AP4031644 Pq-4/Pae-2/Peb   UR/0203/64/004/002/0399/0401
IJP(c) GW   523.165

AUTHOR: Dorman, L.I.; Ivanov, V.I.; Kolomeyets, Ye. V.

TITLE: Increases in the hard component of cosmic ray intensity during "small" solar chromospheric flares

SOURCE: Geomagnetizm i aeronomiya, v. 4, no. 2, 1964, 399-401

TOPIC TAGS: hard cosmic-ray component, cosmic ray, solar flare, solar chromo-sphere

ABSTRACT: An analysis is made of 170 flares of two units of intensity or more as reported by a world network of stations registering the hard component of cosmic ray intensity during small chromospheric flares. The method of period superposition is used, and the daily variation is eliminated by subtracting the daily variation from the preceding day. The results, summarized in a table, show that the magnitude of the effect is not larger than 0.1%, or less than reported earlier by the same group of authors. Statistical processing indicates that roughly 76% of the effect at the equator is due to secondary effects which are most probably of high atmospheric origin. The authors thank M. Murzabekov for the help during the processing of the results and

Card 1/2

L 63628-65

ACCESSION NR: AP4031644

N.S. Kaminer for useful discussions." Orig. art. has: 1 formula, 1 figures, and 1 table.

ASSOCIATION: Kazakhskiy gosudarstvennyy universitet (Kazakh State University)

SUBMITTED: 09May63   ENCL: 00   SUB CODE: AA, ES

NO REF SOV: 009   OTHER: 004

Card 2/2

L 7013-65   EWT(m)/EWP(q)/EWP(b)   AS(mp)-2/ASD(a)-5/ESD(gs)/EAEM(t)   RDW/
JD
ACCESSION NR: AP4046043   S/0070/64/009/005/0655/0659

AUTHOR: Ivanov, V. I.

TITLE: X ray and thermogravimetric study of the octahydrate sul- B
fates of the lanthanoids and yttrium

SOURCE: Kristallografiya, v. 9, no. 5, 1964, 655-659

TOPIC TAGS: yttrium, lanthanoid group, x ray structure, crystal
lattice structure, crystal lattice constant, hydrate, sulfate

ABSTRACT: A systematic study was made, as part of structure inves-
tigations, of the lanthanoid compression in the series of octahy-
drates of the sulfates of lanthanoids. The study was based on an
exact measurement of the periods a and c of the cells, and also the
monoclinic angles β, using a diffractometer. The parameters b were
determined from rotation x-ray pictures obtained during the course
of the exact adjustment of the crystals prior to installation in

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L 7013-65
ACCESSION NR: AP4046043

the diffractometer. Sulfates of the compounds from Pr to Lu, in-
cluding Y, were measured, and comparison with a quartz crystallite
of the same dimensions has shown the accuracy to be within 0.02%.
The results of the measurements of the parameters are listed in
Table 1 of the enclosure. The unit-cell parameters are shown in
Fig. 1 of the enclosure as functions of the atomic number. The
variation of the cell parameters was found to be monotonic without
any kinks near Gd. A thermogravimetric study of the compounds of
Eu, Er, and Yb was made to determine the character of the bond of the
water in the octahydrates of the lanthanoid sulfates, using equip-
ment described by P. N. Paley et al. (Zh. analit. khimii v. 12, 318,
1957) and I. S. Sklyarenko et al. (Zh. analit. khimii, v. 15, 706,
1960). The results show that the water is removed from all the in-
vestigated octahydrates in the temperature interval 100--250C with-
out formation of any intermediate hydrates. It is concluded from
these tests, and also from x-ray powder patterns corresponding to
different stages of the dehydration process, that the water mole-

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L 7013-65
ACCESSION NR: AP4046043

cules are rather weakly bound and their removal does not destroy the
skeleton of the structure. Moreover, anhydrous sulfates tend to
absorb water and restore the initial structure of the octahydrate.
"The author is deeply grateful to Ye. S. Makarov for continuous in-
terest in the work." Orig. art. has: 4 figures and 2 tables.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I.
Vernadskogo (Institute of Geochemistry and Analytical Chemistry)

SUBMITTED: 26Mar64   ENCL: 02

SUB CODE: SS, IC   NR REF SOV: 003   OTHER: 007

Card 3/5

ACC NR: AM5007580   BOOK EXPLOITATION   UR/

Ivanov, Viktor Ivanovich

Dosimetry of ioniging radiation (Dozimetriya ioniziruyushchikh izlucheniy) Moscow, Atomizdat, 1964. 263 p. illus., biblio. 6000 copies printed. Editor: A. A. Muradova; Technical editor: G. L. Usachev; Proofreader: N. A. Smirnova

TOPIC TAGS: x radiation, charged particle, radioactive aerosol, gamma radiation, electromagnetic radiation, nuclear radiation, radiation dosimetry, radiometry, gamma radiation, neutron radiation, ionizing radiation, nuclear engineering

PURPOSE AND COVERAGE: This book has been authorized by the Ministry of Higher and Secondary Special Education of the RSFSR as a text for students in engineering-physics and physical-technical higher educational institutions and faculties. The book will be useful also to engineers, technicians, and laboratory personnel occupied with practical problems of measuring the dosage of nuclear radiation. The text is based on the lecture course presented by the author at the Moscow Engineering-Physics Institute and is directed toward the reader who is already acquainted with atomic and nuclear physics and with methods of recording radiation and the interaction of radiation and materials. Soviet scientists who have contributed significantly to the field of radiation dosimetry are K. K. Aglintsev, N. G. Gusev, B. M. Isayev, O. I. Leypunskiy, and I. B. Keirim-Markus.

Card 1/2   UDC: 621.039.58 + 577.391 (075.8)

ACC NR: AM5007580

TABLE OF CONTENTS:

SUB CODE: 04. 18,06 /SUBM DATE: 10Sep64 /SOV REF: 093   /OTH REF: 022

Card 2/2

ACCESSION NR: AP4041447   S/0089/64/016/006/0497/0500

AUTHORS: Ivanov, V. I.; Krot, N. N.; Smirenkin, G. N.

TITLE: Distribution of the ratio of the radiative-capture and fission cross sections for Pu-239 over the height of the BR-5 reactor

SOURCE: Atomnaya energiya, v. 16, no. 6, 1964, 497-500

TOPIC TAGS: neutron capture, capture cross section, fission cross section, breeder reactor, neutron flux neutron spectrum

ABSTRACT: This research was undertaken because of the interest that attaches to a knowledge of the cross-section ratio for the determination of the breeding ratio, for the choice and averaging of the microscopic constants, and for reactor design in general. The distribution of the neutron-capture reactions was measured by determining the Pu^{240} concentration from the rate of spontaneous fis-

Card   1/5

ACCESSION NR: AP4041447

sion in plutonium samples irradiated in a reactor with integral
flux 10^{21}—10^{22} neut/cm^2. The initial material for the irradiation
was Pu^{239} of almost isotopic purity (containing $\approx 5 \times 10^{-3}$% Pu^{240}).
The distribution of the Pu^{239} fission in the reactor was measured
by two methods -- with the aid of a fission chamber and by determin-
ing the activity of the fission products from the irradiated sam-
ples. The Pu^{239} capture cross section could be determined from the
Pu^{240} concentration and the integral neutron flux. The values ob-
tained for the ratio of the radiative capture to fission cross
section (α) increase from 0.1 to 0.8 with increasing distance from
the reactor center. Data corresponding to the equilibrium spectra
of the neutrons in the active zone and in the outer region of the
reflector agree with the measured capture and fission cross sec-
tions for monoenergetic neutrons. When group calculation is used,
the values agree with the calculated ones only for the active zone,
with noticeable discrepancies in the reflector. "This work was
performed under the general guidance of I. I. Bondarenko and A. P.

Card   2/5

ACCESSION NR: AP4041447

Smirnov-Averin, to whom the authors are grateful. They also thank
A. I. Leypunskiy and O. D. Kazachkovskiy for interest in the work,
V. I. Galkov for participating in individual stages of the work,
Yu. A. Blyumkina for preparing the electronic apparatus, and the
hot-laboratory and reactor crew for help with the experiment."
Orig. art. has: 1 figure and 1 table.

ASSOCIATION: None

SUBMITTED: 18Apr63   ENCL: 02
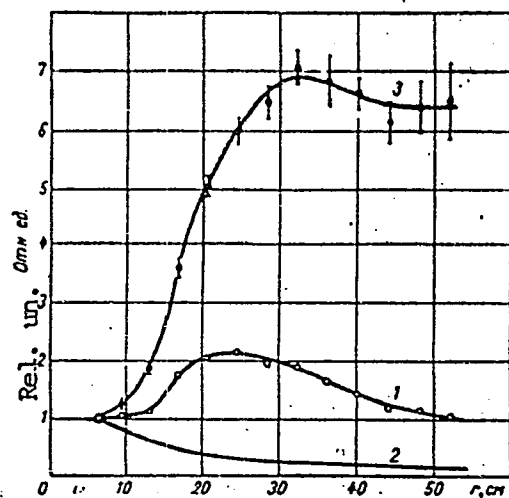
SUB CODE: NP   NR REF SOV: 008   OTHER: 005

Card   3/5

ENCLOSURE: 01

Distribution of the neutron radiative capture (1), fissions, and $\alpha = \sigma_\gamma / \sigma_f$ for Pu^{239} (3) as functions of the distance from the center of the reactor.

The reaction rate and the value of for $r = 4.7$ cm atre taken as unity

Card 4/5

ACCESSION NR: AP4041447   ENCLOSURE: 02

Summary table of the obtained experimental data

Distance to cent. plane, cm	Distance to reactor cent. cm	Pu-240 content, %*	Relative number of captures	Relative number of fissions	Distribution, a	α
0	4,7	0,235±0,008	1,00	1,00	1,0)	0,11 ±0,01
4	6,2	0,234±0,010	0,99±0,04	0,965±0,030	1,04±),05	0,115±0,010
8	9,3	0,252±0,019	1,07±0,07	0,840±0,025	1,28±),10	0,14±0,015
12	12,9	0,268±0,012	1,14±0,04	0,650±0,020	1,76±0,09	0,195±0,015
16	16,7	0,413±0,018	1,76±0,06	0,492±0,015	3,58±),17	0,395±0,035
20	20,5	0,483±0,017	2,06±0,06	0,408±0,012	5,05±0,21	0,555±0,045
24	24,4	0,509±0,019	2,16±0,07	0,333±0,010	6,50±0,27	0,715±0,06
28	28,3	0,460±0,017	1,96±0,06	0,282±0,008	6,95±0,30	0,765±0,065
32	32,2	0,448±0,016	1,90±0,05	0,252±0,007	7,56±0,31	0,83±0,075
36	36,1	0,390±0,024	1,66±0,10	0,226±0,007	7,35±0,50	0,81±0,08
40	40,0	0,342±0,012	1,46±0,04	0,204±0,006	7,14±0,28	0,785±0,07
44	:. 0	0,284±0,015	1,21±0,06	0,182±0,005	6,65±0,38	0,73±0,07
48	48,0	0,275±0,018	1,17±0,07	0,170±0,005	6,90±0,47	0,765±0,08
52	52,0	0,250±0,026	1,06±0,11	0,152±0,005	7,00±0,75	0,77±0,10

*After subtracting the Pu-240 concentration in the initial material and with allowance for the Pu-239 burnup due to fission

Card 5/5

RYABCHIKOV, D.I.; VOLYNETS, M.P.; ZARINSKIY, V.A.; IVANOV, V.I.

Reply to the "remarks" by I.I. Cherniaev, V.A. Golovnia, A.K. Molodkin on the article by D.I. Riabchikov, M.P. Volynets, V.A. Zarinskii and V.I. Ivanov "High frequency titration. Report No.7: Thorium carbonate compounds". Zhur. anal. khim. 19 no.8:1038-1040 '64.   (MIRA 17:11)

IVANOV, V.I., kand. fiz.-matem. nauk, otv. red.

[Dosimetry of ionizing radiations; fundamental concepts.
Terminology] Dozimetriia ioniziruiushchikh izluchenii;
osnovnye poniatiia. Terminologiia. Moskva, Nauka, 1965.
23 p. (Sbornik rekomenduemykh terminov, no.70)
(MIRA 18:10)

1. Akademiya nauk SSSR. Komitet nauchno-tekhnicheskoy
terminologii.

L 11167-66   EWT(1)/EWT(m)   JD

ACC NR: AP6000366   SOURCE CODE: UR/0286/65/000/021/0061/0061

AUTHORS: Devyatov, G. K.; Levit, M. Ye.; Ivanov, V. I.; Kostomakhin, V. A.;
Medzhitov, Il. D.

ORG: none

TITLE: Device for contactless measurement of rotor sag. Class 42, No. 176106
/announced by Moscow Order of Lenin Aviation Institute, im. Sergo Ordzhonikidze
(Moskovskiy ordena Lenina aviatsionnyy institut) _/

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 21, 1965, 61

TOPIC TAGS: electronic circuit, detection equipment

ABSTRACT: This Author Certificate presents a device for contactless measurement of
rotor sag. The device contains a capacitive unary sensor included in a resonance
circuit supplied by a high frequency oscillator, a detector, and a matching stage
with a meter (see Fig. 1). To simplify the measuring process and to increase the
readout accuracy, a compensating capacitor is inserted in the resonance circuit
in series with the sensor. The capacitor insures a linear dependence between the
magnitudes of the output voltage and rotor sag.

UDC: 531.717.2:621.317.39
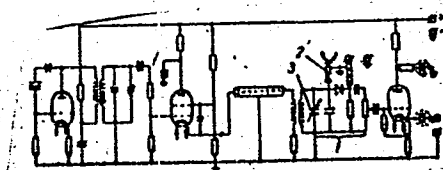
Card 1/2

L 11167-66

ACC NR: AP60(10366

Fig. 1. 1 - Resonance circuit;
2 - sensor; 3 - compensating
capacitor.

Orig. art. has: 1 diagram.

SUB CODE: 09/ SUBM DATE: 17Jul64

Card 2/2

L 29263-66   EWT(1)/FCC   GW

ACC NR: AP6019296   SOURCE CODE: UR/0203/65/005/004/0673/0678

AUTHOR: Dorman, L. I.; Ivanov, V. I.; Kolomeyets, Ye. V.

ORG: Kazakh State University im. S. M. Kirov (Kazakhskiy gosudarstvennyy universitet)

TITLE: Effects of small bursts in the hard component of cosmic rays on quiet and magnetically disturbed days

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 4, 1965, 673-678

TOPIC TAGS: cosmic ray shower, diurnal variation

ABSTRACT: This paper presents an analysis of cosmic ray bursts occurring on magnetically quiet and disturbed days. The bursts are classified into three groups. Statistical accuracy was increased by double averaging: by stations and for all bursts. Solar-diurnal variations were excluded. Data for 19 stations (210 bursts) were used (120 observations on magnetically quiet days and the others at the time of Forbush decreases. Orig. art. has: 4 figures and 1 table. [JPRS]

SUB CODE: 04 / SUBM DATE: 05Jun64 / ORIG REF: 008 / OTH REF: 003

Card 1/1   CC   UDC: 523.165

IVANOV, V.I.   (Moskva)

Rate error of a frequency-type parametric transducer.
Avtom. i telem. 26 no.5:915-917 My '65.   (MIRA 18:12)

1. Submitted July 2, 1964.

IVANOV, V.I.; KOLOMEYETS, Ye.V.

Zones of incidence of solar particles during periods of maximum
and minimum solar activity. Izv. AN SSSR.Ser.fiz. 29 no.10:1807-
1809 0 '65. (MIRA 18:10)

1. Kazakhskiy gosudarstvennyy universitet im. S.M.Kirova.

SUKHANOV,D.Ya., kandidat tekhnicheskikh nauk; IVANOV,V.I., kandidat tekhni-
cheskikh nauk, redaktor; POPOVA,S.M., tekhnicheskiy redaktor

[Using rotary pumps for viscous liquids] Rabota lopastrykh nasosov
na viazkikh zhidkostiakh. Moskva, Gos.nauchno-tekhn.izd-vo mashino-
stroitel'noi lit-ry, 1952. 32 p. [Microfilm]   (MIRA 9:3)
                    (Pumping machinery)

RUBTSCV, V.P.; IVANOV, V.I.

Universal finishing press for bottom gatings. Ognoupory 18
no.6:276-280 Je '53.   (MIRA 11:10)
          (Power presses) (Foundry machinery and supplies)

IVANOV, V.I.

Mastering new winding and warping machines.   Tekst.prom. 15 no.12:
14-16 D '55.   (MLRA 9:3)

1. Starshiy inzhener proizvodstvenno-tekhnicheskogo otdela
Glavivkhloproma.
                     (Textile machinery)

IVANOV, V.I., inzh.; KORSHUN, G.F., inzh.; POGREBENSKIY, G.M., inzh.; BEKKER, D.Z., inzh.; LADYZHENSKIY, V.P., inzh.

Machine used for simultaneous laying and plastering of brick blocks. Rats. i zobr. predl. v stroi. no.2:28-33 '57.   (MIRA 11:1)

1.Omskstroy Ministerstva stroitel'stva predpriyatiy neftyanoy promyshlennosti.
                    (Building blocks)   (Building machinery)